

Appl. No. 10/573,331
Amdt. Dated December 22, 2008
Reply to Office Action of June 25, 2008

Attorney Docket No. 81880.0142
Customer No.: 26021

Amendments to the Drawings:

The attached Annotated and Replacement sheets include changes to Figures 6, 8A, 8B, and 9.

Attachment: 3 Replacement Sheets
3 Annotated Sheets Showing Changes

Appl. No. 10/573,331
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REMARKS/ARGUMENTS:

Minor changes are made to this specification and drawings. Claims 34-36 and 53 are canceled without prejudice. Claims 33, 37, 38, 54-57, and 60 are amended. Claims 33, 37-52, and 54-64 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

The present invention relates to a multi-layer piezoelectric element used for fuel injection apparatus of automobile engine, liquid injection apparatus of ink jet printer or the like or a drive unit used in precision positioning device or vibration preventing device for an optical apparatus, and to a multi-layer piezoelectric element used as a sensor element mounted in combustion pressure sensor, knocking sensor, acceleration sensor, load sensor, ultrasound sensor, pressure sensor, yaw rate sensor or the like, or used as a circuit component mounted in piezoelectric gyro, piezoelectric switch, piezoelectric transducer, piezoelectric breaker or the like. (Applicant's specification, at p. 1, lines 5-16).

INFORMATION DISCLOSURE STATEMENT:

The Office states,

"The information disclosure statement filed 2/2/2007 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language."

Applicant respectfully disagrees. A concise explanation of the relevance of Japanese document 60-099522 can be found at p. 2, lines 7-19 of Applicant's specification. A concise explanation of the relevance of Japanese document 61-

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133715 can be found at p. 2, line 21-p. 3, line 14 of Applicant's specification. Consideration of these two documents is therefore, respectfully requested.

DRAWINGS:

The Office states, "Figures 8A, 8B, and 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated." In response, Applicant amended Figures 8A, 8B, and 9 to include the legend --Prior Art--. Withdrawal of this objection is thus respectfully requested.

The drawings stand objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 15, 51, 52, 53, 55, 61, and 70. In response, Applicant deleted reference characters 51, 52, 55, 61, and 70 from the drawings. In addition, Applicant included a description of reference characters 15 and 53 in the specification. Withdrawal of this objection is thus respectfully requested.

SPECIFICATION:

The Office states,

"The disclosure is objected to because of the following informalities. On pages 2 and 3, the prior art drawings are described using reference numbers for the present invention. For example, on page 2, it appears that 'piezoelectric layers 1 and internal electrodes 2' should be 'piezoelectric layers 11 and internal electrodes 12'. Similarly, on page 3, it appears that 'internal electrodes 2 are connected to external electrode 4' should be 'internal electrodes 12 are connected to external electrodes 15'."

In response, Applicant amended the specification in the manner suggested by the Office. Withdrawal of this objection is thus respectfully requested.

Appl. No. 10/573,331
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Attorney Docket No. 81880.0142
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CLAIM REJECTIONS UNDER 35 U.S.C. § 112:

Claim 38 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and claim the subject matter which applicant regards as the invention.

The Office states,

"Claim 38 compares the values of the resistance and conductivity of the internal electrodes. These properties do not have equivalent units, and therefore cannot be compared in the fashion claimed. For purposes of examination, it will be assumed that 'wherein a resistance of the internal electrode is lower than' is meant to be 'wherein a conductivity of the internal electrode is lower than'."

In response, Applicant amended claim 38 in the manner suggested by the Office. Withdrawal of this rejection is thus respectfully requested.

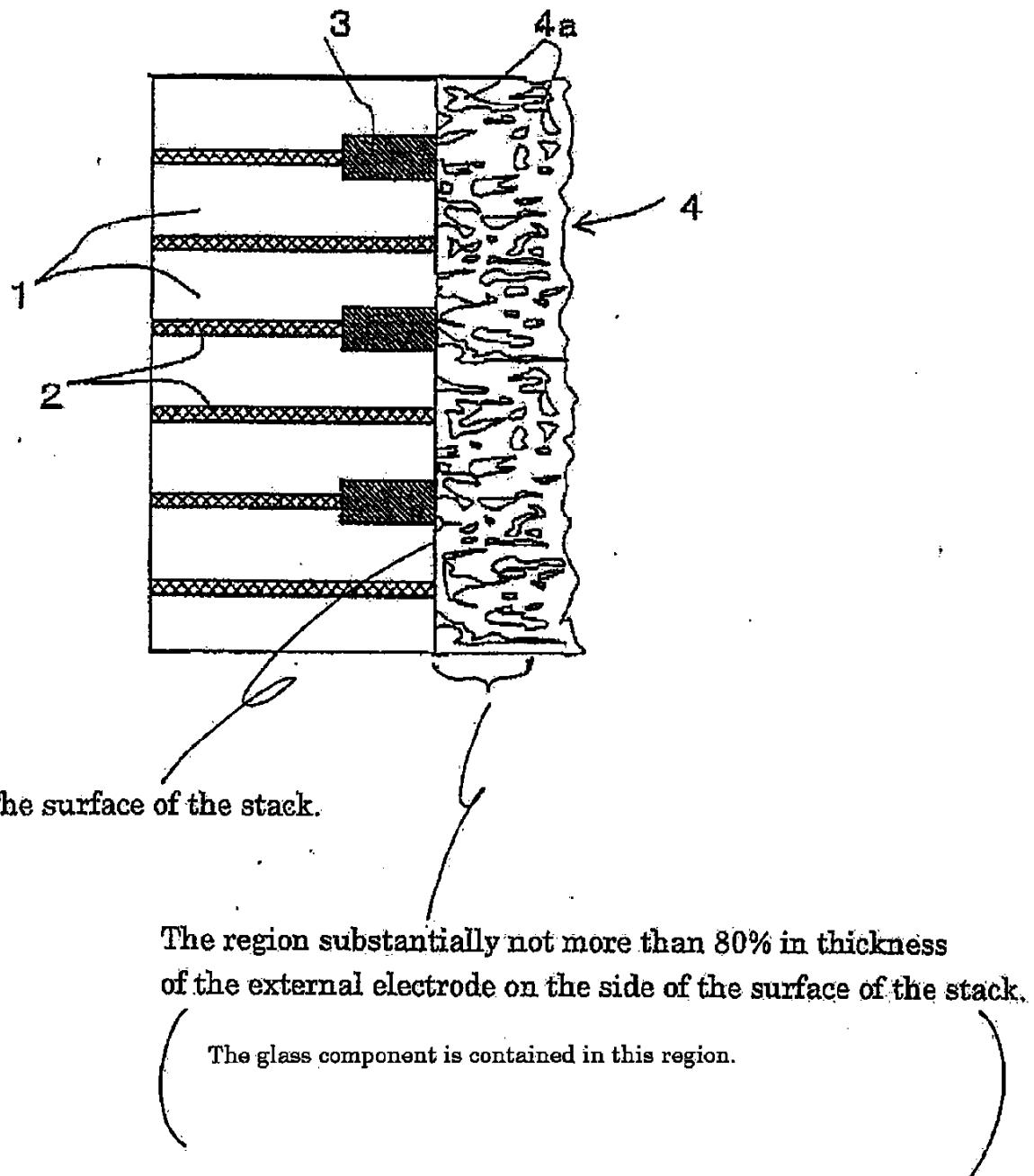
The Office states with respect to claim 56,

"It is unclear what is meant by 'wherein the glass component contained in the external electrode exists in a region substantially not more than 80% in thickness of the external electrode on the side of the surface of the stack'."

In response, Applicant changed "wherein the glass component contained in the external electrode exists in a region substantially not more than 80% in thickness of the external electrode on the side of the surface of the stack" to -- wherein the glass component is contained in a region substantially not more than 80% in thickness of the external electrode on the side of the surface of the stack--. Claim 56 is further explained by the diagram below. Withdrawal of this rejection is thus respectfully requested.

Appl. No. 10/573,331
Amdt. Dated December 22, 2008
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Attorney Docket No. 81880.0142
Customer No.: 26021



Appl. No. 10/573,331
Amtd. Dated December 22, 2008
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Attorney Docket No. 81880.0142
Customer No.: 26021

CLAIM REJECTIONS UNDER 35 U.S.C. § 102:

Claims 33-35, 37, 38, and 42-45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Murai et al. (U.S. Patent Application Publication No. 2003/0080651).

Claims 33-35, 37, 38, and 40-45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hammer et al. (U.S. Patent Application Publication No. 2001/0054859).

CLAIM REJECTIONS UNDER 35 U.S.C. § 103:

Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai.

Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Yoshii et al. (U.S. Patent Application Publication No. 2001/0043454).

Claims 46, 47, 50-52, and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Kawazoe (U.S. Patent Application Publication No. 2002/0084872).

Claims 48 and 49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Kawazoe and Bindig et al. (U.S. Patent No. 6,208,026).

Claims 58, 62, and 63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Nakamura et al. (U.S. Patent Application Publication No. 2002/00158552).

Claim 61 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Tsuyoshi et al. (U.S. Patent No. 6,414,417).

Appl. No. 10/573,331
Amdt. Dated December 22, 2008
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Attorney Docket No. 81880.0142
Customer No.: 26021

Claim 64 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Murai or Hammer in view of Nakamura and Kihara et al. (U.S. Patent Application Publication No. 2002/00158552).

The above rejections are moot with respect to claims 34-36 due to the cancellation of these claims. Applicant respectfully traverses these rejections as to amended claims 33, 37-52, 58, 59, and 61-64.

Claims 33, 37-52, 58, 59, and 61-64, as amended, have all the limitations of canceled claim 53. The Office states that claim 53 stands objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Since claims 33, 37-52, 58, 59, and 61-64 have all the limitations of canceled claim 53, claims 33, 37-52, 58, 59, and 61-64 are allowable for at least the same reasons as claim 53. Withdrawal of this rejection and allowance of claims 33, 37-52, 58, 59, and 61-64 is thus respectfully requested.

ALLOWABLE SUBJECT MATTER:

Claims 53-57 and 60 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, Applicant rewrote claims 54-57 as claims that now depend from an independent claim which has all the limitations of canceled claim 53. In addition, Applicant rewrote claim 60 in the manner suggested by the Office. Withdrawal of this objection and allowance of claims 54-57 and 60 is thus respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

Appl. No. 10/573,331
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Attorney Docket No. 81880.0142
Customer No.: 26021

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4600 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.
By: Barry M. Shuman
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Date: December 22, 2008

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PRIOR ART

Fig. 8A

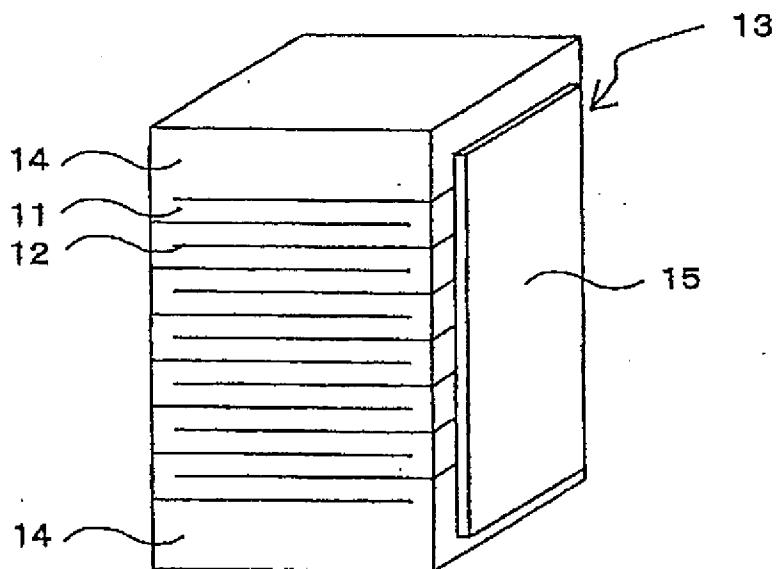


Fig. 8B PRIOR ART

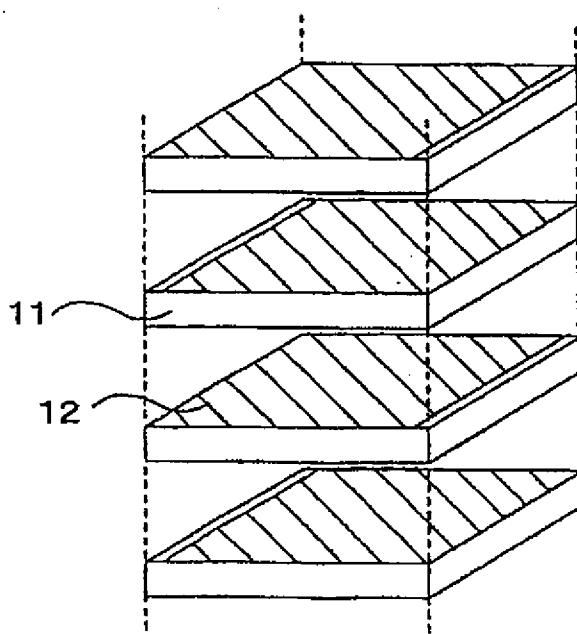


Fig. 6

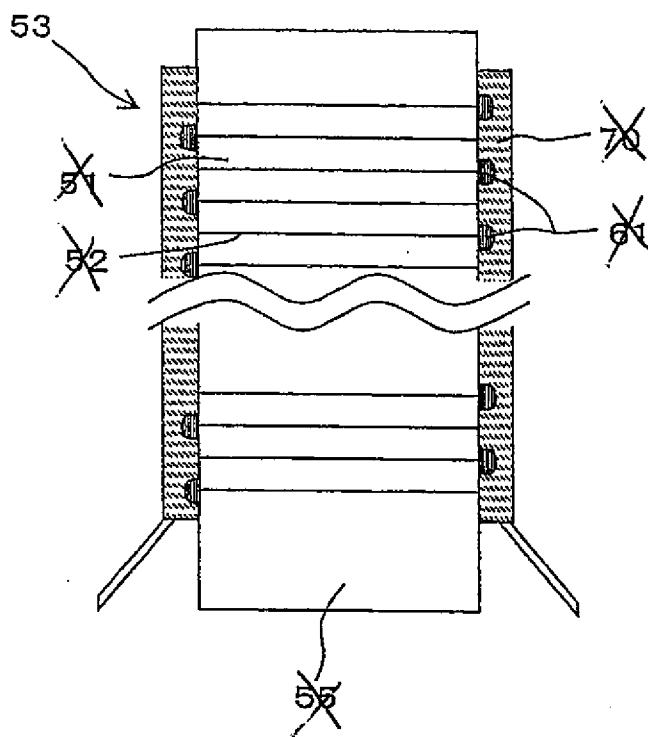


Fig. 7

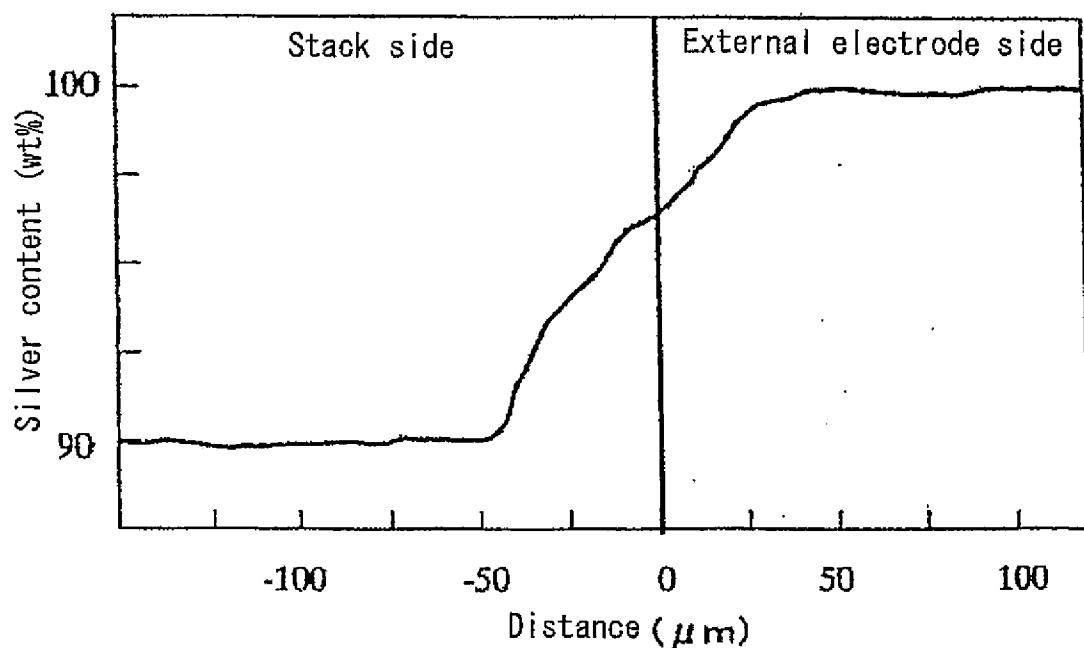


Fig. 9

PRIOR ART

